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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,027	01/24/2002	Friedrich Jonas	Mo6935/LeA 34,765	3582
157	7590	08/22/2005	EXAMINER	
BAYER MATERIAL SCIENCE LLC 100 BAYER ROAD PITTSBURGH, PA 15205			METZMAIER, DANIEL S	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/057,027	JONAS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Daniel S. Metzmaier	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 01 and 13 June 2005.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,4,5 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,4,5 and 9 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/13/2005</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

## **DETAILED ACTION**

Claims 1, 2, 4-5 and 9 are pending.

### ***Information Disclosure Statement***

1. The information disclosure statement filed June 13, 2005 fails to comply with 37 CFR 1.97(c) because it lacks a statement as specified in 37 CFR 1.97(e). Specifically, the statement fails to state: "That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement" (emphasis added).

It has been placed in the application file, but the information referred to therein has not been considered.

### ***Specification***

2. The amendment filed June 1, 2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: applicants newly incorporated subject matter that was disclosed in reference EP-A 991 303 and said reference was not incorporated by reference. Incorporation of said subject matter is deemed to be new matter.

Attention is directed to MPEP 608.01(p): "Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application

containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. *In re de Seversky*, 474 F.2d 671, 177 USPQ 144 (CCPA 1973).".

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 112***

The following rejection is made in the alternative to the rejections base on the prior are rejections, which follow.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 4-5, and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants incorporate subject matter that was not present in the originally filed disclosure by amendment regarding making the claimed composition.

The claims further include limitations in the claims that do not basis in the originally filed disclosure. Specifically, the testing strips claimed do not correspond to those set forth at pages 6-7, lines 22-12, respectively.

Applicants (page 4 of the response filed September 9, 2004) state that one having ordinary skill in the art would **not** know how to make the claimed dispersions and further state that the examiner has not provided a *prima facie* case of obviousness

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regarding the making of the poly(3,4-ethylenedioxythiophene). Applicants improperly reference non-English language foreign references describing how said materials are made. Said references are **not** incorporated by reference. “Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. *In re de Seversky*, 474 F.2d 671, 177 USPQ 144 (CCPA 1973).” See MPEP 608.01(p). The amendments to the specification and claims contains new matter.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 4-5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Louwet et al, US 6,632,472, in view of Bayer AG, DE 198 41 803 A1, as evidenced by Jonas et al, US 6,391,481.

Jonas et al (item 30 on the U.S. Patent face) cited DE 198 41 803 as the foreign priority document. DE 198 41 803 has a publication date of March 2000, more than 12 months prior to the instant filing date. Jonas et al is used as an English language equivalent of the DE 198 41 803 reference and said references are considered to contain the same disclosures or substantially the same disclosures. Jonas et al is referred to for citations.

Louwet et al (examples) discloses aqueous dispersions of poly(3,4-ethylenedioxythiophene) [PEDOT] and polystyrene sulphonate [PSS] having a mean particle size of 50 nm and Table 1 sets forth representative dispersions. Several of the examples having 90% by weight of the particles having sizes less than 58 nm. Applicant's claims set forth dispersions having "about 90 %" and a size of "less than 50 nm" or dispersions, "wherein at least 90% of the particles are less than about 40 nm"

(emphasis added). Since applicants modify both the percentage and/or size of particles by “about”, the disclosure in Louwet et al reads on the instant claims.

It is furthermore noted, the prior art characterizes the particle size by weight and the instant claims are 90% of the particles by particle number. Said comparison is not a direct comparison since the same number of larger particle implicitly represents a larger weight. Assuming the density of the polymer is the same based on the same material, the same number of particles having a larger size would weigh more and have a higher large particle size percentage than the percentage of the number of said larger particles. One skilled in the art would expect the particle size for 90 number percentage based on the number of particles to have a lower particle size than the particle size based on the weight of the particles. This is clear since for two particles having sizes of 58 nm and 50 nm, the resulting particles have a mass ratio of greater than 1.5 times more mass, i.e., volume, for the 58 nm particle than for the 50 nm particle.

To the extent the Louwet et al differs from the claims in the particle size distribution, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the degree of homogenization and/or microfluidization clearly contemplated in the Louwet et al reference. Louwet et al (examples, particularly column 17, lines 1-16) discloses treatment of the dispersions with a homogenizer and a microfluidizer. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the degree of homogenization and/or microfluidization for the advantage of obtaining a more homogeneous and stable compositions and coating resulting therefrom.

Applicants have not shown the different particle characterization based on the particle number or by particle weight to be distinct. To the extent the particle size distribution differs, applicants have not shown said difference to be unexpected or unobvious over the prior art.

Furthermore, Bayer Ag and Jonas et al (column 2, lines 7 et seq) teaches the very fine particle size of the dispersions improve the lifetime of the devices employing said materials therein. Bayer Ag and Jonas et al (examples and column 2, lines 7 et seq) disclose 3,4-polyalkylenedioxythiophene/polystyrene sulfonate dispersions (PEDT/PSS, wt ratio = 1:2.5; 1:4; and 1:8). Bayer Ag and Jonas et al further teach that by varying the specific ratio of the conductive polycations (PEDT) to the nonconductive counter-ions or nonionic binders (PSS), the occurrence of short circuits or cross-talk can be significantly reduced.

It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to reduce the particle size of the dispersion for increased particle packing at the coating surface and increased dispersion homogeneity. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the ratio of the PEDT/PSS ratio for the advantage of varying the resistivity and conductivity of the layered formed therefrom.

The coating resistivity of the claims would have been an expected result of varying the PEDT/PSS ratio due to the decrease of the conductive polycations and increase of the nonconductive polyanions clearly contemplated in the reference.

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9. Claims 1, 4-5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayer AG, DE 198 41 803 A1, as evidenced by Jonas et al, US 6,391,481; optionally in view of Krafft et al, US 5,370,981. Jonas et al (item 30 on the U.S. Patent face) cited DE 198 41 803 as the foreign priority document. DE 198 41 803 has a publication date of March 2000, more than 12 months prior to the instant filing date. Jonas et al is used as an English language equivalent of the DE 198 41 803 reference and said references are considered to contain the same disclosures or substantially the same disclosures. Jonas et al is referred to for citations.

Bayer Ag and Jonas et al differ from the claims in the particle size and the resistivity.

Bayer Ag and Jonas et al (examples and column 2, lines 7 et seq) disclose 3,4-polyalkylenedioxythiophene/polystyrene sulfonate dispersions (PEDT/PSS, wt ratio = 1:2.5; 1:4; and 1:8). Bayer Ag and Jonas et al column 2, lines 7 et seq) teaches the very fine particle size of the dispersions improve the lifetime of the devices employing said materials therein. Bayer Ag and Jonas et al further teach that by varying the specific ratio of the conductive polycations (PEDT) to the nonconductive counterions or nonionic binders (PSS), the occurrence of short circuits or crosstalk can be significantly reduced.

It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the particle size of the dispersion for increased particle packing at the coating surface and increased dispersion homogeneity. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to

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vary the ratio of the PEDT/PSS ratio for the advantage of varying the resistivity and conductivity of the layered formed therefrom.

The coating resistivity of the claims would have been an expected result of varying the PEDT/PSS ratio due to the decrease of the conductive polycations and increase of the nonconductive polyanions clearly contemplated in the reference.

Furthermore, Krafft et al (examples) exemplifies PEDT/PSS dispersions and teaches (column 3, lines 11-18) teaches the particle sizes of the dispersions may range from 5 nm to 100 nm. These references are combinable because they teach PEDT/PSS dispersions. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the particle size of said dispersions within the conventional size ranges as shown Krafft et al reference for the advantage of stability and the expectation of a more homogeneous final product.

Applicants' evidence of record does not show any unexpected or nonobvious results in view of the prior art.

Regarding the coating properties of more than 5000  $\Omega$ cm, applicants have not provided a nexus between the claimed intermediate compositions and the properties of the final product as a coating. Since this is a property that depends on the method of coating and applicants have not made the proper nexus between the claimed dispersions and the coatings, which define said property; said property is given little or no patentable weight. The resistance of the coating would have been expected to be inherent to the compositions of the prior art since said resistance may be attained by

varying the coating methods and/or parameters, such as thickness. Said methods are not and/or parameters are not set forth in the claims.

***Response to Arguments***

10. Applicant's arguments filed June 13, 2005 have been fully considered but they are not persuasive.

11. Applicants (page 7 of above noted response) assert that basis for the claim amendments are found in the specification between page 6, line 22, to page 7, line 12. Applicants further state that the amendments to the specification at pages 6, 10, and 11 have been made to address the improper incorporation by reference and are further in accordance with MPEP 608.01(p). Attention is directed to MPEP 608.01(p), wherein it states: "Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. In re de Seversky, 474 F.2d 671, 177 USPQ 144 (CCPA 1973)." The facts reflected in the preceding statement correspond to the instant facts. Said amendment is deemed to be new matter. Furthermore, the declaration of Dr. Friedrich Jonas is not probative since it states the subject matter of the EP document to be "incorporated by reference" but the original disclosure did not incorporate said document by reference but merely referred thereto.

12. Applicants (pages 8 and 9) remarks regarding the rejection under 35 USC 112, first paragraph for written description have been addressed in the above rejection.

13. Applicants (pages 10 and 11) assert: "In light of the disparity in disclosed particle size between Louwet et al and Jonas et al, a skilled artisan would not have been motivated to combine or otherwise modify their respective disclosures to arrive at Applicants' presently claimed dispersions.". This has not been deemed persuasive since Bayer Ag and Jonas et al (column 2, lines 7 et seq) teaches the very fine particle size of the dispersions improve the lifetime of the devices employing said materials therein. Clearly, Louwet et al discloses a means for achieving the particle size desired in the Bayer Ag and Jonas et al references.

14. Applicants (page 11) further assert the Louwet et al and Jonas et al references lack a disclosure of the claimed limitations that 90 % by weight of the particles of the dispersion are less than 40 nm, and which provides a coating having a resistivity of at least 5000  $\Omega$ cm. Attention is directed to MPEP 2112.01: "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977)". In the instant case, the prior art discloses the use of closely related compositions differing in the characterization of the particle size distribution and the characterization of the surface resistivity. Some variation in particle size and surface resistivity would have been expected. Applicants present data, but said data is based on new matter and therefore has not been deemed probative. Said data further does not compare the closest prior art compositions, which are those that have been processed as in the Louwet et al reference.

15. In response to applicant's argument (page 11) that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In the instant case, the prior art discloses the desired result of reduced particle size, the advantage of device longevity, and means for attaining the desired particle size reduction. Some variation in the particle size distribution is clearly within the level of one having ordinary skill in the art.

16. Applicants (pages 11 and 12) assert that in light of the amendments the claims no longer read on the Louwet et al reference. The rejection has been made under obviousness. Once a prior art teaching a product appearing to be substantially the same is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference. As noted above, the data presented in the specification is based on new matter and is not deemed probative.

17. Applicants (page 12) assert a smaller particle size does not necessarily result in increased packing but the higher surface area of smaller particles can result in particles prone to repulsive inter-particle forces, diminishing particle packing, particles prone to aggregation and decreased dispersion homogeneity. Applicants proffer no evidence of

said properties and do not refute the Bayer Ag and Jonas et al (column 2, lines 7 et seq) teaching that very fine particle size of the dispersions improve the lifetime of the devices employing said materials therein.

18. Applicants (pages 12 and 13) assert the Krafft et al reference does not recite the particle size of 90% of the particles in their dispersions and therefore does not disclose the limitation of 90 % by weight of the particles having a particle size of less than 40 nm. This has not been deemed persuasive for the following reasons. Since the Krafft et al reference does not disclose the percentage of the particles having a particle size of 5 nm to 100 nm, it would be reasonable to conclude 100 % by weight of the particles are within the range of 5 to 100 nm. A *prima facie* case of obviousness having been presented, applicants have not proffered evidence to rebut said *prima facie* case of obviousness.

19. Applicants (page 13) assert a smaller particle size does not necessarily result in increased packing but the higher surface area of smaller particles can result in particles prone to repulsive inter-particle forces, diminishing particle packing, particles prone to aggregation and decreased dispersion homogeneity. Applicants proffer no evidence of said properties and do not refute the Bayer Ag and Jonas et al (column 2, lines 7 et seq) teaching that very fine particle size of the dispersions improve the lifetime of the devices employing said materials therein.

### ***Conclusion***

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



*Daniel S. Metzmaier*  
**Daniel S. Metzmaier**  
**Primary Examiner**  
**Art Unit 1712**

DSM